PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Jean-Paul BRIAND et al. Attn: PCT Branch

Application No. 09/889,178

Filed: July 12, 2001 Docket No.: 110072

For: PSEUDOPEPTIDE, SYNTHESIS METHOD, REAGENT AND APPLICATIONS

TRANSLATION OF THE ANNEXES TO THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Director of the U.S. Patent and Trademark Office
Washington, D.C. 20231

Sir:

Attached hereto is a translation of the annexes to the International Preliminary Examination Report (Form PCT/IPEA/409). The attached translated material replaces the material in the specification at page 1, line 1, to page 3, line 20.

Respectfully submitted,

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Date: August 21, 2001

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. :

U.S. National Serial No. :

Filed :

PCT International Application No. : PCT/FR00/00053

VERIFICATION OF A TRANSLATION

I, the below named translator, hereby declare that:

My name and post office address are as stated below;

That I am knowledgeable in the French language in which the below identified international application was filed, and that, to the best of my knowledge and belief, the English translation of the amended sheets of the international application No. PCT/FR00/00053 is a true and complete translation of the amended sheets of the above identified international application as filed.

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application issued thereon.

Date: July 20, 2001

Full name of the translator : Abraham SMITH

For and on behalf of RWS Group plc

Post Office Address : Europa House, Marsham Way,

Gerrards Cross, Buckinghamshire,

England.

PSEUDOPEPTIDE, SYNTHESIS METHOD, REAGENT AND APPLICATIONS

For many years, many teams have focused on synthesizing analogs of peptides or proteins which mimic the biological activities of natural peptides or proteins. There may be mentioned, by way of example, the peptide analogs obtained by replacing one or more amino acids of the L series with one or more corresponding amino acids of the D series, the peptides exhibiting a modification at the level of at least one of the peptide bonds, such as the retro, inverso, retro-inverso, carba and aza bonds.

The carba bond (CH_2-CH_2) has been described as a potential mimic of the peptide bond (Mendre C. et al., European J. Pharmacol., 186, p. 213-222, 1990; Attwood et al., Bioorg. Med. Chem. Lett., 7, p. 429-432, 1997). Moreover, the partial or complete replacement of the α-carbon by a nitrogen atom on a peptide has made it possible to obtain advantageous pseudopeptides called azapeptides and azatides respectively (Gante, J., Synthesis, p. 405-413, 1989; Han H. and Janda K.D., J. Amer. Chem. Soc, 118, p. 2539-2544, 1996).

In general, these peptide analogs, called pseudopeptides, have, as a first advantage, a metabolic stability which is greater than that of natural peptides or proteins because they are not degraded by natural proteases or are degraded less rapidly. Moreover, the conformational changes induced by these chemical modifications can improve the biological properties of these pseudopeptides.

While the techniques for the synthesis of so-called natural peptides, in particular on solid supports, are well established and make it possible to easily prepare peptides comprising several tens of amino acids, the

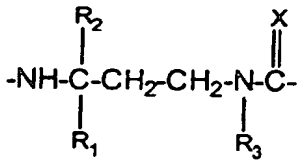
introduction of these modifications in order to prepare pseudopeptides renders the synthesis more complex, in particular for long pseudopeptides.

Moreover, in the field of immunology and both in the diagnosis of viral or autoimmune diseases and in immunotherapy or vaccination, the synthetic peptides mimicking the epitopes of proteins represent a valuable alternative. The size of the peptides which are analogs of these antigenic determinants or epitopes is an important factor in the choice of these peptides and has been the subject of numerous publications (M.H.V. Regenmortel, Immunology Today, 10(8), p. 266-271, 1989 or M.H.V. Regenmortel, Biomedical Peptides, Proteins & Nucleic Acids, 1, p. 109-116, 1995). While originally it was accepted that an epitope comprises between 15 and 22 amino acids, recent studies show that this size may be reduced to a few amino acids. In the immunity domain, crystallographic studies on the interaction of peptides and the major histocompatibility complex (MHC) indicate a size of 9 to 13 amino acids for a good interaction with the MHC class I molecules and 9 to 25 for the MHC class II (H.G. Rammensee, Current Opinion in Biotechnology, 7, p. 85-96, 1995). Likewise, in diagnosis, the size is a critical factor for the use of peptides. In the case of HIV (human immunodeficiency virus), the smallest epitopes comprise from 4 to 6 amino acids but the peptides used still have a size greater than at least 12 amino acids (D. Osmanov, AIDS, 5(1), WHO1-WHO9, 1991). In another example, such as the diagnosis of Chagas' disease, the peptides used comprise a minimum of 12 amino acids (WO-A-97/18475).

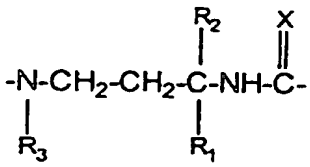
It is the object of the present invention to describe a novel family of pseudopeptides comprising a novel carbaza unit significantly modifying the peptide backbone and whose use in the context of peptide synthesis is easy both in solid phase and in liquid phase, and this even for peptides of a large size and

in particular greater than 6 amino acids. This novel family of pseudopeptides can be used in the diagnostic field to provide in vitro methods for the diagnosis of pathology conditions associated with the presence of endogenous or exogenous proteins in an individual, or in the therapeutic field, and in particular immunotherapy or vaccination.

These pseudopeptides have a size of at least 6 amino acids comprising at least one unit chosen from the B units of general formula I and/or II defined below:



(I)



(II)

in which:

R_1, R_2 and R_3 each independently of one another represent an amino acids side chain and may be identical or different, and

X represents an oxygen or sulfur atom, preferably an oxygen atom.

Advantageously, R_2 represents a hydrogen atom.

The expression amino acids is understood to mean the primary amino acids which encode proteins, the amino acids derived after enzymatic action such as trans-4-hydroxyproline and the natural amino acids but which are not present in proteins, such as norvaline, N-methyl-L-leucine, staline (Hunt S. in Chemistry and Biochemistry of the amino acids, Barett G.C., ed., Chapman and Hall, London, 1985), the amino acids protected by chemical functional groups which can be used in synthesis on solid supports or in liquid phase

TRAITE DE COOPERATION EN MATIERE DE BREVETS

Expéditeur: le BUREAU INTERNATIONAL

PCT

NOTIFICATION D'ELECTION

(règle 61.2 du PCT)

Destinataire:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

en sa qualité d'office élu

Date d'expédition (jour/mois/année) 02 octobre 2000 (02.10.00)	
Demande internationale no PCT/FR00/00053	**Référence du dossier du déposant ou du mandataire** MD/B05B3272
Date du dépôt international (jour/mois/année) 12 janvier 2000 (12.01.00)	**Date de priorité** (jour/mois/année) 15 janvier 1999 (15.01.99)
Déposant BRIAND, Jean-Paul etc	

1. L'office désigné est avisé de son élection qui a été faite:

[X] dans la demande d'examen préliminaire international présentée à l'administration chargée de l'examen préliminaire international le:

07 août 2000 (07.08.00)

[ ] dans une déclaration visant une élection ultérieure déposée auprès du Bureau international le:

2. L'élection [X] a été faite

[ ] n'a pas été faite

32

avant l'expiration d'un délai de 19 mois à compter de la date de priorité ou, lorsque la règle 32 s'applique, dans le délai visé à la règle 32.2b).

Bureau international de l'OMPI **34, chemin des Colombettes** **1211 Genève 20, Suisse**	Fonctionnaire autorisé Christelle Croci
no de télécopieur: (41-22) 740.14.35	no de téléphone: (41-22) 338.83.38

TRAITE DE COOPERATION EN MATIERE DE BREVETS

PCT

RAPPORT D'EXAMEN PRELIMINAIRE INTERNATIONAL

(article 36 et règle 70 du PCT)

Référence du dossier du déposant ou du mandataire B05B3272 MD/DG	**POUR SUITE A DONNER** voir la notification de transmission du rapport d'examen préliminaire international (formulaire PCT/IPEA/416)	
Demande internationale n° PCT/FR00/00053	Date du dépot international *(jour/mois/année)* 12/01/2000	Date de priorité *(jour/mois/année)* 15/01/1999
Classification internationale des brevets (CIB) ou à la fois classification nationale et CIB C07K7/02		
Déposant BIO MERIEUX et al.		

1. Le présent rapport d'examen préliminaire international, établi par l'administaration chargée de l'examen préliminaire international, est transmis au déposant conformément à l'article 36.

2. Ce RAPPORT comprend 4 feuilles, y compris la présente feuille de couverture.

   ☒ Il est accompagné d'ANNEXES, c'est-à-dire de feuilles de la description, des revendications ou des dessins qui ont été modifiées et qui servent de base au présent rapport ou de feuilles contenant des rectifications faites auprès de l'administration chargée de l'examen préliminaire international (voir la règle 70.16 et l'instruction 607 des Instructions administratives du PCT).

   Ces annexes comprennent 4 feuilles.

3. Le présent rapport contient des indications relatives aux points suivants:

   - I ☒ Base du rapport
   - II ☐ Priorité
   - III ☐ Absence de formulation d'opinion quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle
   - IV ☐ Absence d'unité de l'invention
   - V ☒ Déclaration motivée selon l'article 35(2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration
   - VI ☐ Certains documents cités
   - VII ☒ Irrégularités dans la demande internationale
   - VIII ☐ Observations relatives à la demande internationale

Date de présentation de la demande d'examen préliminaire internationale	Date d'achèvement du présent rapport
07/08/2000	09.04.2001
Nom et adresse postale de l'administration chargée de l'examen préliminaire international: Office européen des brevets D-80298 Munich Tél. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Fonctionnaire autorisé Romano-Götsch, R N° de téléphone +49 89 2399 8874

RAPPORT D'EXAMEN PRÉLIMINAIRE INTERNATIONAL

Demande internationale n° PCT/FR00/00053

I. Base du rapp rt

1. En ce qui concerne les **éléments** de la demande internationale (*les feuilles de remplacement qui ont été remises à l'office récepteur en réponse à une invitation faite conformément à l'article 14 sont considérées dans le présent rapport comme "initialement déposées" et ne sont pas jointes en annexe au rapport puisqu'elles ne contiennent pas de modifications (règles 70.16 et 70.17)*):

Description, pages:

2,4-25	version initiale			
1,3	reçue(s) le	05/03/2001	avec la lettre du	26/02/2001

Revendications, N°:

13-18	version initiale			
1-12	reçue(s) le	05/03/2001	avec la lettre du	26/02/2001

Dessins, feuilles:

1/2,2/2	version initiale

2. En ce qui concerne la **langue**, tous les éléments indiqués ci-dessus étaient à la disposition de l'administration ou lui ont été remis dans la langue dans laquelle la demande internationale a été déposée, sauf indication contraire donnée sous ce point.

   Ces éléments étaient à la disposition de l'administration ou lui ont été remis dans la langue suivante: , qui est :

   ☐ la langue d'une traduction remise aux fins de la recherche internationale (selon la règle 23.1(b)).
   ☐ la langue de publication de la demande internationale (selon la règle 48.3(b)).
   ☐ la langue de la traduction remise aux fins de l'examen préliminaire internationale (selon la règle 55.2 ou 55.3).

3. En ce qui concerne les **séquences de nucléotides ou d'acide aminés** divulguées dans la demande internationale (le cas échéant), l'examen préliminaire internationale a été effectué sur la base du listage des séquences :

   ☐ contenu dans la demande internationale, sous forme écrite.
   ☐ déposé avec la demande internationale, sous forme déchiffrable par ordinateur.
   ☐ remis ultérieurement à l'administration, sous forme écrite.
   ☐ remis ultérieurement à l'administration, sous forme déchiffrable par ordinateur.
   ☐ La déclaration, selon laquelle le listage des séquences par écrit et fourni ultérieurement ne va pas au-delà de la divulgation faite dans la demande telle que déposée, a été fournie.

☐ La déclaration, selon laquelle les informations enregistrées sous déchiffrable par ordinateur sont identiques à celles du listages des séquences Présenté par écrit, a été fournie.

4. Les modifications ont entraîné l'annulation :

☐ de la description, pages :
☐ des revendications, n^{os} :
☐ des dessins, feuilles :

5. ☐ Le présent rapport a été formulé abstraction faite (de certaines) des modifications, qui ont été considérées comme allant au-delà de l'exposé de l'invention tel qu'il a été déposé, comme il est indiqué ci-après (règle 70.2(c)) :

(Toute feuille de remplacement comportant des modifications de cette nature doit être indiquée au point 1 et annexée au présent rapport)

6. Observations complémentaires, le cas échéant :

V. Déclaration motivée selon l'article 35(2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration

1. Déclaration

Nouveauté	Oui :	Revendications	1-18
	Non :	Revendications	
Activité inventive	Oui :	Revendications	1-18
	Non :	Revendications	
Possibilité d'application industrielle	Oui :	Revendications	1-18
	Non :	Revendications	

2. Citations et explications
voir feuille séparée

VII. Irrégularités dans la demande internationale

Les irrégularités suivantes, concernant la forme ou le contenu de la demande internationale, ont été constatées :
voir feuille séparée

Il est fait référence aux documents suivants cité dans le rapport de recherche internationale:

D1: Bradshaw, C.G., et al., J. MED. CHEM., vol. 37, (1994), 1991-1995

D2: WO-A-92 13 883

V. Nouveauté

Le document D1, qui est considéré comme l'art antérieur le plus proche, a trait à des hepta-pseudopetpides antagonistes du récepteur NK2 de la Tachychinin, comprenant le groupement Ph-CO-Dab(γ-R)-Ala (voir D1: p.1992, Fig. 1, les composés 5, 5A, 5B, 5C). Les peptides selon D1 ont donc un squelette classique de peptide naturel, et possèdent un groupement R comme chaîne latérale.

Le document D2 a trait à des deca-pseudopeptides agonistes de l'hormone LH-RH, qui ne possède pas de motif I ou II selon la Demande (Art. 33(2) PCT).

Par conséquent, l'objet des revendications 1 à 18 est nouveau par rapport à D1 et D2 (Art. 33(2) PCT).

Activité Inventive

Comme aucun des documents cités ne suggère de modifier les pseudopeptides décrit pour attendre les pseudopeptides selon la Demande, l'objet des revendications 1 à 18 parait inventif par rapport à D1 et D2 (Art. 33(3) PCT).

VII. La nouvelle revendication 12 n'est pas complète par rapport à la revendication 12 d'origine.

PSEUDOPEPTIDE, PROCEDE DE SYNTHESE, REACTIF ET APPLICATIONS

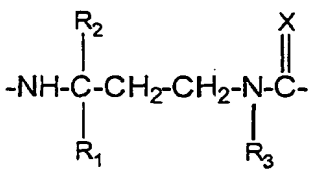
Depuis des années de nombreuses équipes se sont attachées à synthétiser des analogues de peptides ou de protéines qui miment les activités biologiques des peptides ou protéines naturels. On peut citer à titre d'exemple les analogues peptidiques obtenus par remplacement d'un ou plusieurs acides aminés de la série L par un ou des acides aminés correspondants de la série D, les peptides présentant une modification au niveau d'au moins une des liaisons peptidiques, telles que les liaisons rétro, inverso, rétro-inverso, carba et aza.

La liaison carba (CH_2-CH_2) a été décrite comme un mime potentiel de la liaison peptidique (Mendre C. et al., European J. Pharmacol., 186, p213-222, 1990; Attwood et al., Bioorg. Med. Chem. Lett., 7, p429-432, 1997). Par ailleurs, le remplacement du carbone α par un atome d'azote partiel ou complet sur un peptide a permis d'obtenir des pseudopeptides intéressants dénommés azapeptides et azatides respectivement (Gante, J., Synthesis, p405-413, 1989 ; Han H. et Janda K.D., J. Amer. Chem. Soc, 118, p2539-2544, 1996).

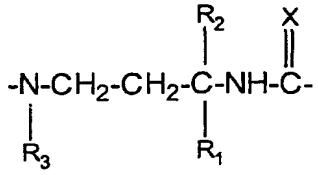
D'une manière générale ces analogues peptidiques, dénommés pseudopeptides, présentent comme premier avantage une stabilité métabolique supérieure à celle des peptides ou protéines naturels en raison du fait qu'ils ne sont pas dégradés par les protéases naturelles ou le sont moins vite. Par ailleurs, les changements de conformation induits par ces modifications chimiques peuvent améliorer les propriétés biologiques de ces pseudopeptides, voir par exemple les analogues décapeptidiques antagonistes des hormones hypothalamiques décrits dans WO-A-92/13883.

utilisés possèdent toujours une taille supérieure d'au moins 12 acides aminés (D. Osmanov, AIDS, 5(1), WHO1-WHO9, 1991). Dans un autre exemple comme le diagnostic de la maladie de Chagas, les peptides utilisés comportent au minimum 12 acides aminés (WO-A-97/18475). Dans (Bradshaw C.G. et col., J. Med. Chem.,37,1991-1995,1994) des sondes fluorescentes analogues de l'antagoniste heptapeptidique de NK_2, ont été obtenues par substitution d'un acide aminé et couplage avec un fluorophore.

C'est l'objet de la présente invention que de décrire une nouvelle famille de pseudopeptides comportant un nouveau motif carbaza modifiant de manière significative le squelette peptidique et dont la mise en oeuvre dans le cadre de la synthèse de peptides soit aisée aussi bien en phase solide qu'en phase liquide et ce, même pour des peptides de taille importante et notamment supérieure à 6 acides aminés. Cette nouvelle famille de pseudopeptides est utilisable dans le domaine diagnostique pour fournir des méthodes de diagnostic in vitro de pathologies associées à la présence de protéines endogènes ou exogènes chez un individu, ou dans le domaine thérapeutique et notamment l'immunothérapie ou la vaccination. Ces pseudopeptides ont une taille d'au moins 6 acides aminés comprenant au moins un motif choisi parmi les motifs B de formule générale I et/ou II définies ci-dessous :



(I)

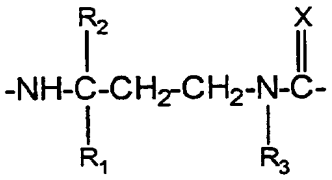


(II)

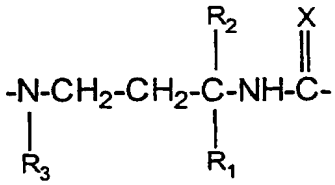
dans lesquelles :

REVENDICATIONS

1/ Pseudopeptide d'au moins 6 acides aminés comprenant au moins un motif choisi parmi les motifs de formules générales (I) et/ou (II) :



(I)



(II)

dans lesquelles :

R_1, R_2 et R_3 représentent chacun indépendamment l'un de l'autre une chaîne latérale d'acides aminés et peuvent être identiques ou différents,

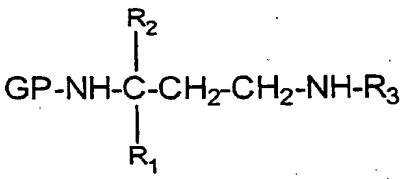
X représente un atome d'oxygène ou de soufre.

2/ Pseudopeptide selon la revendication 1 d'une taille d'au moins 9 acides aminés.

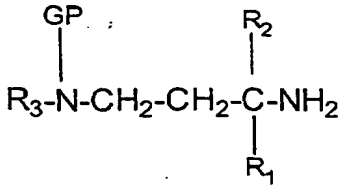
3/ Pseudopeptide selon la revendication 1 ou 2, caractérisé en ce que X représente un atome d'oxygène.

4/ Pseudopeptide selon l'une quelconque des revendications 1 à 3, caractérisé en ce que R_2 représente un atome d'hydrogène.

5/ Procédé de synthèse d'un pseudopeptide selon l'une quelconque des revendications 1 à 4, caractérisé en ce que l'on effectue un couplage d'une diamine monoprotégée de formule générale IIIa ou IIIb



(IIIa)



(IIIb)

dans lesquelles, R_1, R_2 et R_3 représentent chacun indépendamment l'un de l'autre une chaîne latérale d'acides aminés et peuvent être identiques ou différents, GP représente un groupement protecteur de fonction amine

avec une amine en présence d'un agent de carbonylation.

6/ Procédé selon la revendication 5, caractérisé en ce que GP est un groupement Boc, Fmoc, Cbz ou Alloc.

7/ Procédé selon la revendication 5 ou 6, caractérisé en ce que l'agent de carbonylation est choisi parmi le N,N'-carbonyldiimidazole et le triphosgène.

8/ Réactif pour la détection d'une pathologie associée à la présence de protéines endogènes ou exogènes, caractérisé en ce qu'il comprend à titre de substance réactive au moins un pseudopeptide selon l'une quelconque des revendications 1 à 4.

9/ Réactif selon la revendication 8, caractérisé en ce que le pseudopeptide est marqué par un traceur ou la biotine.

10/ Réactif selon les revendications 8 et 9, caractérisé en ce que la taille du pseudopeptide est au moins de 12 acides aminés.

11/ Kit de détection d'une pathologie associée à la présence de protéines endogènes ou exogènes caractérisé en ce qu'un réactif selon l'une quelconque des revendications 8 à 10, est fixé sur un support solide immunologiquement compatible avec ledit réactif.

12/ Procédé de détection et/ou de dosage de molécules biologiques présentes dans un échantillon dans lequel on utilise le réactif selon l'une quelconque des revendications 8 à 10, pour former un complexe immun avec

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. PCT-FR00/00053

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference *(if desired) (12 characters maximum)* MD/B05B3272

Box No. I TITLE OF INVENTION

PSEUDOPEPTIDE, SYNTHESIS METHOD, REAGENT AND APPLICATIONS

Box No. II APPLICANT ☐ This person is also inventor

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

BIO MERIEUX
Chemin de l'Orme
69280 MARCY L'ETOILE
FRANCE

Telephone No.

Facsimile No.

Teleprinter No.

Applicant's registration No. with the Office

State *(that is, country)* of nationality: FRANCE

State *(that is, country)* of residence: FRANCE

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

BRIAND Jean-Paul
22 rue des Balayeurs
67000 STRASBOURG
FRANCE

This person is:
☐ applicant only
☒ applicant and inventor
☐ inventor only *(If this check-box is marked, do not fill in below.)*

Applicant's registration No. with the Office

State *(that is, country)* of nationality: FRANCE

State *(that is, country)* of residence: FRANCE

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

CABINET GERMAIN & MAUREAU
BP 6153
69466 LYON CEDEX 06
FRANCE

Telephone No.
04 72 69 84 30

Facsimile No.
04 72 69 84 31

Teleprinter No.

Agent's registration No. with the Office

☐ **Address for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

SEMETEY Vincent
8 rue J.H. Schnitzler
67000 STRASBOURG
FRANCE

This person is:
☐ applicant only
☒ applicant and inventor
☐ inventor only (*If this check-box is marked, do not fill in below.*)

Applicant's registration No. with the Office

State *(that is, country)* of nationality: FRANCE

State *(that is, country)* of residence: FRANCE

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

LIMAL David
24 rue d'Adelshossen
67300 SCHILTIGHEIM
FRANCE

This person is:
☐ applicant only
☒ applicant and inventor
☐ inventor only (*If this check-box is marked, do not fill in below.*)

Applicant's registration No. with the Office

State *(that is, country)* of nationality: FRANCE

State *(that is, country)* of residence: FRANCE

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

This person is:
☐ applicant only
☐ applicant and inventor
☐ inventor only (*If this check-box is marked, do not fill in below.*)

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

This person is:
☐ applicant only
☐ applicant and inventor
☐ inventor only (*If this check-box is marked, do not fill in below.*)

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No. V DESIGNATION OF STATES *Mark the applicable check-boxes below; at least one must be marked.*

The following designations are hereby made under Rule 4.9(a): **(Double-click here if you want all the boxes below checked.)**

Regional Patent

- ☒ **AP** **ARIPO Patent:** **GH** Ghana, **GM** Gambia, **KE** Kenya, **LS** Lesotho, **MW** Malawi, **MZ** Mozambique, **SD** Sudan, **SL** Sierra Leone, **SZ** Swaziland, **TZ** United Republic of Tanzania, **UG** Uganda, **ZW** Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA** **Eurasian Patent:** **AM** Armenia, **AZ** Azerbaijan, **BY** Belarus, **KG** Kyrgyzstan, **KZ** Kazakhstan, **MD** Republic of Moldova, **RU** Russian Federation, **TJ** Tajikistan, **TM** Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP** **European Patent:** **AT** Austria, **BE** Belgium, **CH & LI** Switzerland and Liechtenstein, **CY** Cyprus, **DE** Germany, **DK** Denmark, **ES** Spain, **FI** Finland, **FR** France, **GB** United Kingdom, **GR** Greece, **IE** Ireland, **IT** Italy, **LU** Luxembourg, **MC** Monaco, **NL** Netherlands, **PT** Portugal, **SE** Sweden, **TR** Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA** **OAPI Patent:** **BF** Burkina Faso, **BJ** Benin, **CF** Central African Republic, **CG** Congo, **CI** Côte d'Ivoire, **CM** Cameroon, **GA** Gabon, **GN** Guinea, **GW** Guinea-Bissau, **ML** Mali, **MR** Mauritania, **NE** Niger, **SN** Senegal, **TD** Chad, **TG** Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT *(if other kind of protection or treatment desired, specify on dotted line)*.....

National Patent *(if other kind of protection or treatment desired, specify on dotted line)*:

- ☒ **AE** United Arab Emirates
- ☐ **AG** Antigua and Barbuda
- ☒ **AL** Albania
- ☒ **AM** Armenia
- ☒ **AT** Austria
- ☒ **AU** Australia
- ☒ **AZ** Azerbaijan
- ☒ **BA** Bosnia and Herzegovina
- ☒ **BB** Barbados
- ☒ **BG** Bulgaria
- ☒ **BR** Brazil
- ☒ **BY** Belarus
- ☐ **BZ** Belize
- ☒ **CA** Canada
- ☒ **CH & LI** Switzerland and Liechtenstein
- ☒ **CN** China
- ☐ **CO** Colombia
- ☒ **CR** Costa Rica
- ☒ **CU** Cuba
- ☒ **CZ** Czech Republic
- ☒ **DE** Germany
- ☒ **DK** Denmark
- ☒ **DM** Dominica
- ☐ **DZ** Algeria
- ☒ **EE** Estonia
- ☒ **ES** Spain
- ☒ **FI** Finland
- ☒ **GB** United Kingdom
- ☒ **GD** Grenada
- ☒ **GE** Georgia
- ☒ **GH** Ghana
- ☒ **GM** Gambia
- ☒ **HR** Croatia
- ☒ **HU** Hungary
- ☒ **ID** Indonesia
- ☒ **IL** Israel
- ☒ **IN** India
- ☒ **IS** Iceland
- ☒ **JP** Japan
- ☒ **KE** Kenya
- ☒ **KG** Kyrgyzstan
- ☒ **KP** Democratic People's Republic of Korea
- ☒ **KR** Republic of Korea
- ☒ **KZ** Kazakhstan
- ☒ **LC** Saint Lucia
- ☒ **LK** Sri Lanka
- ☒ **LR** Liberia
- ☒ **LS** Lesotho
- ☒ **LT** Lithuania
- ☒ **LU** Luxembourg
- ☒ **LV** Latvia
- ☒ **MA** Morocco
- ☒ **MD** Republic of Moldova
- ☒ **MG** Madagascar
- ☒ **MK** The former Yugoslav Republic of Macedonia
- ☒ **MN** Mongolia
- ☒ **MW** Malawi
- ☒ **MX** Mexico
- ☒ **MZ** Mozambique
- ☒ **NO** Norway
- ☒ **NZ** New Zealand
- ☒ **PL** Poland
- ☒ **PT** Portugal
- ☒ **RO** Romania
- ☒ **RU** Russian Federation
- ☒ **SD** Sudan
- ☒ **SE** Sweden
- ☒ **SG** Singapore
- ☒ **SI** Slovenia
- ☒ **SK** Slovakia
- ☒ **SL** Sierra Leone
- ☒ **TJ** Tajikistan
- ☒ **TM** Turkmenistan
- ☒ **TR** Turkey
- ☒ **TT** Trinidad and Tobago
- ☒ **TZ** United Republic of Tanzania
- ☒ **UA** Ukraine
- ☒ **UG** Uganda
- ☒ **US** United States of America
- ☒ **UZ** Uzbekistan
- ☒ **VN** Viet Nam
- ☒ **YU** Yugoslavia
- ☒ **ZA** South Africa
- ☒ **ZW** Zimbabwe

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet

☐ ..... ☐ ..... ☐ .....
☐ ..... ☐ ..... ☐ .....

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except the designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. *(Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)*

Box No. VI PRIORITY CLAIM

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (*day/month/year*)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 15 January 1999	99 00597	FRANCE		
item (2)				
item (3)				
item (4)				
item (5)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (*only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office*) identified above as:

☒ all items ☐ item (1) ☐ item (2) ☐ item (3) ☐ item (4) ☐ item (5) ☐ other, see Supplemental Box

**Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)):* 1

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):*

ISA /EP

Request to use results of earlier search: reference to that search (*if an earlier search has been carried out by or requested from the International Searching Authority*):

Date *(day/month/year)*	Number	Country (*or regional Office*)
4 October 99	FA 571137	FRANCE

Box No. VIII DECLARATIONS

The following **declarations** are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

		Number of declarations
☐ Box No. VIII (i)	Declaration as to the identify of the inventor	:
☐ Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	:
☐ Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	:
☐ Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:
☐ Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty:	:

Box No. IX CHECK LIST; LANGUAGE OF FILING

This international application **contains**:

(a) the following number of **sheets in paper form**:

request (including declaration sheets)	: 4
description (excluding sequence listing part)	: 25
claims	: 4
abstract	: 1
drawings	: 2
Sub-total number of sheets	:
sequence listing part of description *(actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (b) below)*	:
Total number of sheets	: 36

(b) sequence listing part of description filed in **computer readable form**

(i) ☐ only (under Section 801(a)(i))

(ii) ☐ in addition to being filed in paper form (under Section 801(a)(ii))

Type and number of carriers (diskette, CD-ROM, CD-R or other) on which the sequence listing part is contained *(additional copies to be indicated under item 9(ii), in right column)*:

.....

This international application is **accompanied by** the following item(s) *(mark the applicable check-boxes below and indicate in right column the number of each item)*:

Number of items

1. ☒ fee calculation sheet :
2. ☐ original separate power of attorney :
3. ☐ original general power of attorney :
4. ☐ copy of general power of attorney; reference number, if any: .....:
5. ☐ statement explaining lack of signature :
6. ☐ priority document(s) identified in Box No. VI as item(s): .....:
7. ☐ translation of international application into *(language)*: .....:
8. ☐ separate indications concerning deposited microorganism or other biological material :
9. ☐ sequence listing in computer readable form (indicate also type and number of carriers (diskette, CD-ROM, CD-R or other))
   - (i) ☐ copy submitted for the purposes of international search under Rule 13*ter* only (and not as part of the international application) :
   - (ii) ☐ *(only where check-box (b)(i) or (b)(ii) is marked in left column)* additional copies including, where applicable, the copy for the purposes of international search under Rule 13*ter* :
   - (iii) ☐ together with relevant statement as to the identity of the copy or copies with the sequence listing part mentioned in left column :
10. ☐ other *(specify)* .....:

Figure of the drawings which should accompany the abstract:

Language of filing of the international application: French

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

CABINET GERMAIN & MAUREAU

Mireille DIDIER

LYON, 12 January 2000

CPI 971202

For receiving Office use only

1. Date of actual receipt of the purported international application:

2. Drawings:

3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:

☐ received:

4. Date of timely receipt of the required corrections under PCT Article 11(2):

☐ not received:

5. International Searching Authority (if two or more are competent): ISA /

6. ☐ Transmittal of search copy delayed until search fee is paid

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

See Notes to the request form

COPY FOR IB

PATENT COOPERATION TREATY

PCT

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09/889178 4

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Artcle 36 and Rule 70)

Applicant's or agent's file reference soobok04	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. **PCT/KR00/00012**	International filing date *(day/month/year)* 11 JANUARY 2000 (11.01.2000)	Priority date *(day/month/year)* 13 JANUARY 1999 (13.01.1999)

International Patent Classification (IPC) or national classification and IPC

IPC7 H04L 12/58

Applicant

LEE, Soobok

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demamd	Date of completion of this report
08 JULY 2000 (08.07.2000)	25 APRIL 2001 (25.04.2001)

Name and mailing address of the IPEA/KR	Authorized officer
Korean Intellectual Property Office Government Complex-Taejon, Dunsan-dong, So-ku, Taejon Metropolitan City 302-701, Republic of Korea	JEON, Jong Seong
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5948

Form PCT/IPEA/409 (cover sheet) (July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International aplication No.
PCT/KR00/00012

I. Basis of the report

1. With regard to the elements of the international application:*

[X] the international application as originally filed

[ ] the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

[ ] the claims:
pages _____ , as originally filed
pages _____ , as amended (together with any statment) under Article 19
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

[ ] the drawings:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

[ ] the sequence listing part of the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application(under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide** and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[ ] contained inthe international application in written form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disc losure in the international applicationas as filed has been furinshed.

[ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. [ ] The amendments have resulted in the cancellation of:

[ ] the description, pages _____

[ ] the claims, Nos. _____

[ ] the drawings, sheet _____

5. [ ] This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box(Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION

International aplication No.
PCT/KR00/00012

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-6	YES
	Claims		NO
Inventive step (IS)	Claims	1-6	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Craims 1-6 meets the criteria set out in PCT Article 33(2),(3),(4), because the prior art does not teach or fairly suggest the e-mail add-on system comprising ;
a domain suffix e-mail address representation system including systex of a receiver mail address in form of "USERID@DOMAIN.suffix"
, and a relay-mode add-on service mail server installed to an internet host
, and meta domain name system including a meta domain name database

, and because this invention has industrial applicability.

09/889178

Translation

09/889178

09/889178

RECEIVED
MAR 13 2002
TECH CENTER 1600/2900

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference MD/B05B3272	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FR00/00053	International filing date (*day/month/year*) 12 January 2000 (12.01.00)	Priority date (*day/month/year*) 15 January 1999 (15.01.99)
International Patent Classification (IPC) or national classification and IPC C07K 7/02		
Applicant BIO MERIEUX		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
07 August 2000 (07.08.00)	09 April 2001 (09.04.2001)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR00/00053

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 2,4-25, as originally filed
pages _____, filed with the demand
pages 1,3, filed with the letter of 05 March 2001 (05.03.2001)

☒ the claims:

pages 13-18, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-12, filed with the letter of 05 March 2001 (05.03.2001)

☒ the drawings:

pages 1/2,2/2, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims		NO
Inventive step (IS)	Claims	1-18	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

2. Citations and explanations

Reference is made to the following documents, cited in the international search report:

D1: Bradshaw, C.G., et al., J. MED. CHEM., vol. 37, (1994), 1991-1995
D2: WO-A-92 13 883

Novelty:

Document D1, which is considered the closest prior art, concerns tachychinin NK2 receptor antagonist hepta-pseudopeptides, including the grouping Ph-CO-Dab(γ-R)-Ala (see D1: page 1992, Figure 1, compounds 5, 5A, 5B, 5C). The peptides according to D1 therefore have a conventional natural peptide backbone, and have a side chain consisting of an R grouping.

Document D2 relates to LH-RH agonist deca-pseudopeptides that do not comprise a motif of formula I or II as per the application (PCT Article 33(2)).

Consequently, the subject matter of Claims 1 to 18 is novel over D1 and D2 (PCT Article 33(2)).

Inventive step

Since none of the cited documents suggests modifying the pseudopeptides described in such a way as to arrive at the pseudopeptides of the present application, the subject matter of Claims 1 to 18 appears to be inventive over D1 and D2 (PCT Article 33(3)).

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The newly filed Claim 12 is not complete in relation to the originally filed Claim 12.

TRAITE DE COOPERATION EN MATIERE DE BREVETS

PCT

RAPPORT DE RECHERCHE INTERNATIONALE

(article 18 et règles 43 et 44 du PCT)

Référence du dossier du déposant ou du mandataire MD/B05B3272	**POUR SUITE A DONNER** voir la notification de transmission du rapport de recherche internationale (formulaire PCT/ISA/220) et, le cas échéant, le point 5 ci-après	
Demande internationale n° PCT/FR 00/ 00053	Date du dépôt international *(jour/mois/année)* 12/01/2000	(Date de priorité (la plus ancienne) *(jour/mois/année)* 15/01/1999
Déposant BIO MERIEUX et al.		

Le présent rapport de recherche internationale, établi par l'administration chargée de la recherche internationale, est transmis au déposant conformément à l'article 18. Une copie en est transmise au Bureau international.

Ce rapport de recherche internationale comprend 2 feuilles.

[X] Il est aussi accompagné d'une copie de chaque document relatif à l'état de la technique qui y est cité.

1. **Base du rapport**

   a. En ce qui concerne la **langue,** la recherche internationale a été effectuée sur la base de la demande internationale dans la langue dans laquelle elle a été déposée, sauf indication contraire donnée sous le même point.

   [ ] la recherche internationale a été effectuée sur la base d'une traduction de la demande internationale remise à l'administration.

   b. En ce qui concerne **les séquences de nucléotides ou d'acides aminés** divulguées dans la demande internationale (le cas échéant), la recherche internationale a été effectuée sur la base du listage des séquences :

   [ ] contenu dans la demande internationale, sous forme écrite.

   [ ] déposée avec la demande internationale, sous forme déchiffrable par ordinateur.

   [ ] remis ultérieurement à l'administration, sous forme écrite.

   [ ] remis ultérieurement à l'administration, sous forme déchiffrable par ordinateur.

   [ ] La déclaration, selon laquelle le listage des séquences présenté par écrit et fourni ultérieurement ne vas pas au-delà de la divulgation faite dans la demande telle que déposée, a été fournie.

   [ ] La déclaration, selon laquelle les informations enregistrées sous forme déchiffrable par ordinateur sont identiques à celles du listage des séquences présenté par écrit, a été fournie.

2. [ ] **Il a été estimé que certaines revendications ne pouvaient pas faire l'objet d'une recherche** (voir le cadre I).

3. [ ] **Il y a absence d'unité de l'invention** (voir le cadre II).

4. En ce qui concerne le **titre,**

   [X] le texte est approuvé tel qu'il a été remis par le déposant.

   [ ] Le texte a été établi par l'administration et a la teneur suivante:

5. En ce qui concerne **l'abrégé,**

   [X] le texte est approuvé tel qu'il a été remis par le déposant

   [ ] le texte (reproduit dans le cadre III) a été établi par l'administration conformément à la règle 38.2b). Le déposant peut présenter des observations à l'administration dans un délai d'un mois à compter de la date d'expédition du présent rapport de recherche internationale.

6. La figure **des dessins** à publier avec l'abrégé est la Figure n°

   [ ] suggérée par le déposant.

   [ ] parce que le déposant n'a pas suggéré de figure.

   [ ] parce que cette figure caractérise mieux l'invention.

   [X] Aucune des figures n'est à publier.

RAPPORT DE RECHERCHE INTERNATIONALE

Demande Internationale No
[redacted]FR 00/00053

A. CLASSEMENT DE L'OBJET DE LA DEMANDE
CIB 7 C07K7/02

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

B. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultée (système de classification suivi des symboles de classement)
CIB 7 C07K

Documentation consultée autre que la documentation minimale dans la mesure où ces documents relèvent des domaines sur lesquels a porté la recherche

Base de données électronique consultée au cours de la recherche internationale (nom de la base de données, et si réalisable, termes de recherche utilisés)

C. DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie °	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	no. des revendications visées
T	LIMAL D ET AL: "Solid-phase Synthesis of N,N'-Unsymmetrically Substituted Ureas: Application to the Synthesis of Carbaza Peptides" TETRAHEDRON LETTERS, vol. 40, no. 14, 2 avril 1999 (1999-04-02), page 2749-2752 XP004159428 ISSN: 0040-4039 le document en entier	1-18
X	C.G. BRADSHAW ET AL.: "Synthesis and characterisation of selective flourescent ligands for neurokinin NK2 receptor" J. MED. CHEM., vol. 37, 1994, pages 1991-1995, XP002117380 figure 1	1,3,4,8, 9

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[X] Voir la suite du cadre C pour la fin de la liste des documents

[X] Les documents de familles de brevets sont indiqués en annexe

° Catégories spéciales de documents cités:

"A" document définissant l'état général de la technique, non considéré comme particulièrement pertinent

"E" document antérieur, mais publié à la date de dépôt international ou après cette date

"L" document pouvant jeter un doute sur une revendication de priorité ou cité pour déterminer la date de publication d'une autre citation ou pour une raison spéciale (telle qu'indiquée)

"O" document se référant à une divulgation orale, à un usage, à une exposition ou tous autres moyens

"P" document publié avant la date de dépôt international, mais postérieurement à la date de priorité revendiquée

"T" document ultérieur publié après la date de dépôt international ou la date de priorité et n'appartenenant pas à l'état de la technique pertinent, mais cité pour comprendre le principe ou la théorie constituant la base de l'invention

"X" document particulièrement pertinent; l'inven tion revendiquée ne peut être considérée comme nouvelle ou comme impliquant une activité inventive par rapport au document considéré isolément

"Y" document particulièrement pertinent; l'inven tion revendiquée ne peut être considérée comme impliquant une activité inventive lorsque le document est associé à un ou plusieurs autres documents de même nature, cette combinaison étant évidente pour une personne du métier

"&" document qui fait partie de la même famille de brevets

Date à laquelle la recherche internationale a été effectivement achevée	Date d'expédition du présent rapport de recherche internationale
14 avril 2000	25/04/2000

Nom et adresse postale de l'administration chargée de la recherche internationale	Fonctionnaire autorisé
Office Européen des Brevets, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Cervigni, S

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Formulaire PCT/ISA/210 (deuxième feuille) (juillet 1992)

RAPPORT DE RECHERCHE INTERNATIONALE

Demande Internationale No
P[redacted]R 00/00053

C.(suite) DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie °	Identification des documents cités, avec, le cas échéant, l'indicationdes passages pertinents	no. des revendications visées
X	WO 92 13883 A (UNIV TULANE) 20 août 1992 (1992-08-20) page 10 -page 11; revendications 7,8	1,3,4
A	DALLAIRE C ET AL: "Synthesis of new building blocks: towards the analogs of peptide nucleic acids (PNAs)<1a" TETRAHEDRON LETTERS, vol. 39, no. 29, 16 juillet 1998 (1998-07-16), page 5129-5132 XP004162398 ISSN: 0040-4039	
A	US 5 475 013 A (TALLEY JOHN J ET AL) 12 décembre 1995 (1995-12-12)	
A	EP 0 126 974 A (SEARLE & CO) 5 décembre 1984 (1984-12-05) revendication 6	
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Information on patent family members

International Application No
PCT/FR 00/00053

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